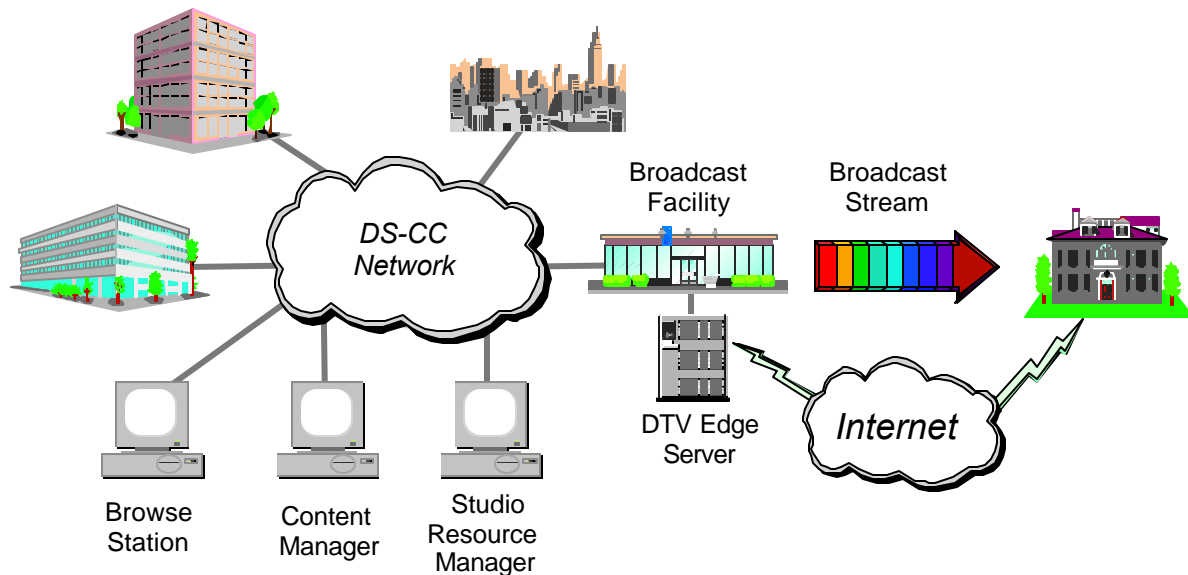# Digital Television Broadcast Technology

- The digital television (DTV) project is creating a network infrastructure for collaborating on content creation and for providing new DTV services, such as Web access.

Broadcast Facility

Broadcast Stream

DS-CC Network

Internet

DTV Edge Server

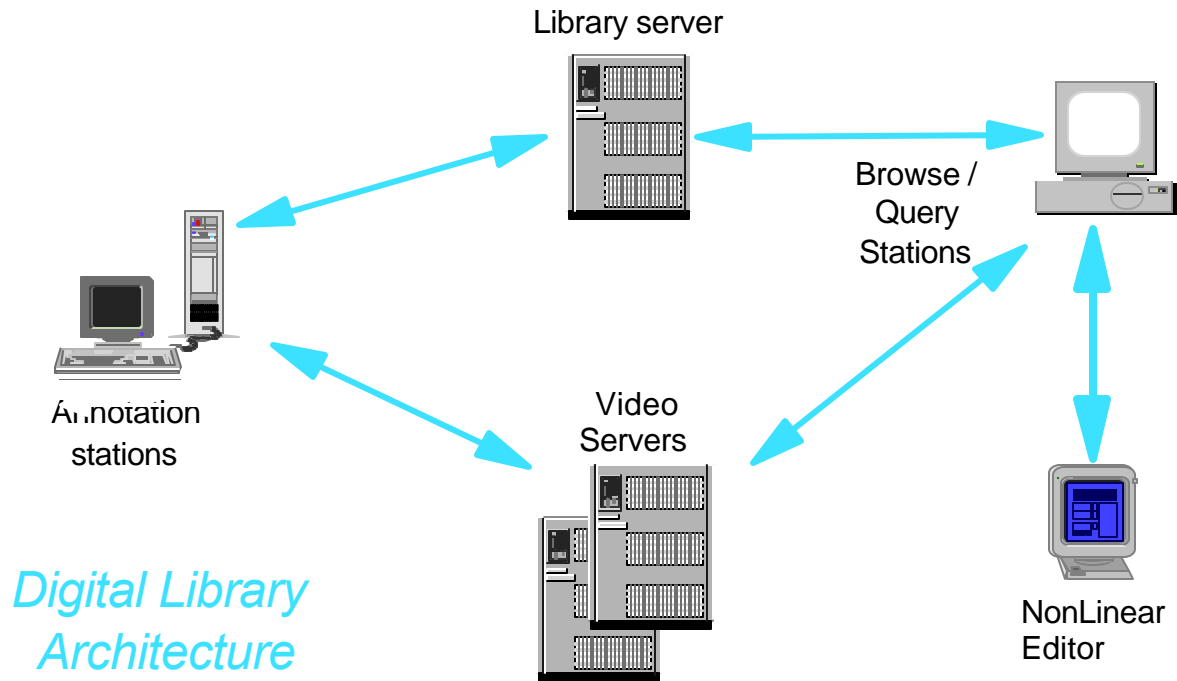Browse Station

Content Manager

Studio Resource Manager

- The Digital Studio Network Architecture
  - The Digital studio command and control network provides access to content and production resources located on the network.
  - Studio Resource Manager manages network and devices.
    - Computes and establishes network connections.
  - Content Manager manages and locates video assets.
    - Browse Station provides video search and browse capabilities.
  - DTV Edge Server provides applications utilizing DTV channel

Contributors: Ruud Bolle, Eric Brown, Christian Cesar, Anni Coden, John Connell, Chitra Dorai, Norman Haas, Arun Hampapur, James Janniello, Laura Luan, Robert Mack, Chris Ward

Digital Television Broadcast Technology

- ■ Content Ingest and Management

Library server

Browse / Query Stations

Annotation stations

Video Servers

NonLinear Editor

Digital Library Architecture

- ■ Video production support from Ingest to Production
  - – Annotation Stations ingest video programs and automatically produce indices to enable searching of video libraries.
  - – Video Programs are stored on video servers. Directories and indices are stored on Library Server.
  - – Browse station allows searching and browsing of studio's video content.
    - ◆ Searches based on Keywords, Face Count, Camera Motion, Shot Length.
    - ◆ Candidate videos can be assembled into a storyboard for preview.

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Digital Television Broadcast Technology

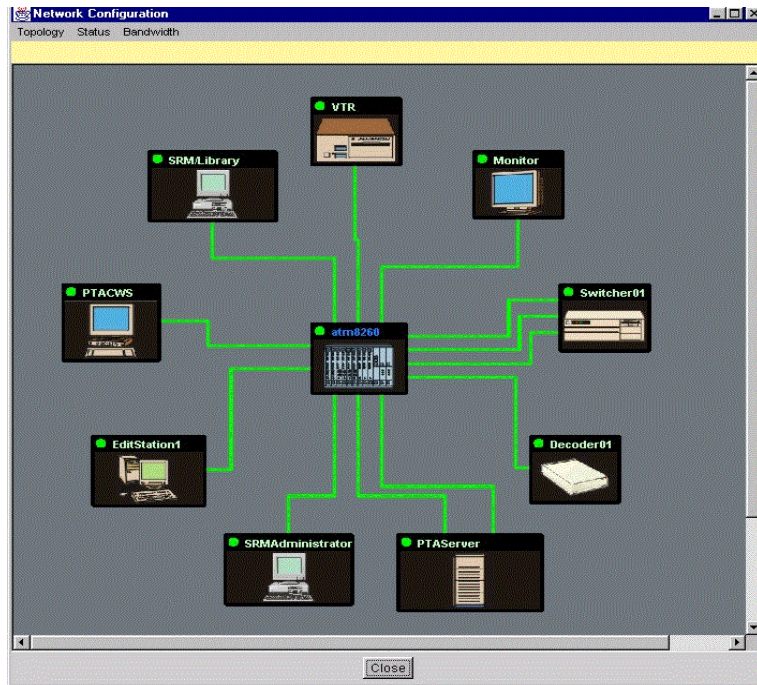- DTV Edge Server: Program Augmentation

- Edge Server locates and adds related news stories to video news programs
  - News video is analyzed to determine story topic(s).
  - Database query is formulated using this information.
  - Databases, newswires and websites are searched.
  - Results are ranked, selected and scheduled for broadcast.
  - Text-based news stories are multiplexed with video program.
  - Client application displays news video and text story titles.

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Digital Television Broadcast Technology

- Studio Resource Manager (SRM)

- SRM helps users locate and access studio components
  - Directory service helps find video servers, monitors, etc. and determine their capabilities.
  - Users can reserve equipment and network resources for either immediate use or for a future time.
  - SRM notifies client and all servers of activated reservation and establishes network connections.
  - Automatic switchover occurs upon detecting a component or network failure.

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